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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/631,041	07/29/2003	Jean-Claude Villeneuve	TJK/403	9274
27717	7590	02/02/2006		
SEYFARTH SHAW LLP 55 E. MONROE STREET SUITE 4200 CHICAGO, IL 60603-5803			EXAMINER CAZAN, LIVIUS RADU	
			ART UNIT	PAPER NUMBER
			3729	

DATE MAILED: 02/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/631,041

Applicant(s)

VILLENEUVE ET AL.

Examiner

Livius R. Cazan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-13 and 17-26 is/are rejected.
- 7) ☒ Claim(s) 9 and 14-16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>12/28/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I, claims 1-26 in the reply filed on 12/21/2005 is acknowledged.
2. Claims 27-36 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 12/21/2005.

Specification

3. The abstract of the disclosure is objected to because "thought" in line 7 should read ~~through~~. Correction is required. See MPEP § 608.01(b).
4. The disclosure is objected to because of the following informalities:
 - a. On page 4, line 27, "mechanism" should read ~~mechanisms~~.
 - b. On page 11, line 6, "has" should read ~~as~~.
 - c. On page 12, lines 3-5, the sentence beginning with "Having the gripper..." is unclear and needs revising.
 - d. On page 12, line 5, "move" should read ~~moving~~.
 - e. On page 12, line 9, "pull" should read ~~pulled~~.
 - f. On page 12, line 9, "so that loose of wire (W) can be generated" is unclear and should be revised.

Appropriate correction is required.

5. The use of the trademark DOAL has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

6. Claim 21 is objected to because of the following informalities: in the second line, "than that the other wire retainer" should read –than that of the other wire retainer–. Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claim 26 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9. Claim 26 recites the limitation "the mechanical structure" in the second line. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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11. Claims 1-3, 6-8, and 12-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Matsui. (US4616396)

a. Regarding claim 1, Matsui discloses the same invention as the applicant, including

- a wire output guide (wire guide 23 in Figs. 1, 4, and 5))
- a crimp punch tool (assembling punch 31 in Figs. 1, 4, and 5)
- a first actuator operatively connected to the crimp punch tool (pneumatic cylinder 38 in Fig. 1)
- a wire cutter tool adjacent to the crimp punch tool (cutting punch 33 in Figs. 1, 4, and 5)
- a second actuator operatively connected to the wire cutter tool (pneumatic cylinder 39 in Fig. 1)

b. Regarding claims 2 and 3, Matsui discloses the same invention as the applicant, including a spool holder for receiving a wire spool from which the wire is provided (reels 1 inherently must have a support; pivot points passing through reels 1 in Fig. 1 are the spindles)

c. Regarding claim 6, Matsui discloses the same invention as the applicant, including a wire gripper (return preventive chuck 52 in Figs. 1, 3, and 5)

d. Regarding claim 7, Matsui discloses the same invention as the applicant, including a wire gripper comprising:

- A wire gripper actuator (pneumatic cylinder 60 together with presser bars 59) having a movable part (presser rods 59 in Figs. 1, 3, and 5)

with a free end, the movable part being selectively movable between an elongated position and a retracted position.

- A seat (guide bar 57 in Figs. 1, 3, and 5) in registry with the free end, whereby the wire is held by frictional engagement between the free end of the movable part and the seat when the movable part is at the elongated position (i.e. when pneumatic cylinders 60 push the presser rods 59 against the guide bar 57)

e. Regarding claim 8, Matsui discloses the same invention as the applicant, including a wire gripper actuator (pneumatic cylinder 60) being a pneumatic linear actuator and being connected to a pneumatic source (Inherently he pneumatic cylinder must be connected to a pneumatic source)

f. Regarding claim 12, Matsui discloses the same invention as the applicant, including a wire tension mechanism (tension pulley unit 51 in Figs. 1 and 5, including rollers 5 which are deemed equivalent to pulleys) located upstream of the wire output guide.

g. Regarding claim 13, Matsui discloses the same invention as the applicant, including a swing arm (swinging arms 53 in Figs. 1 and 5) having

- a first and second end, the first end being connected to the apparatus (see Figs. 1 and 5)
- a first pulley pivotally connected to the second end of the swing arm (tension pulleys 54 in Figs. 1 and 5)
- a second pulley (one of rollers 5 in Figs. 1 and 5)

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsui in view of Starace (US3796392).

a. Regarding claim 4, Matsui et al disclose the same invention as the applicant, except for a brake operatively connected to a wire spool.

Starace teaches the use of constant friction brakes on reels of wire, so as to control the unwinding of wire from the reel, preventing wire overrun and consequent entanglement and waste of wire (col. 1, Ins. 15-25)

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the wire spool of Matsui in view of the teachings of Starace by providing a friction brake to the spool for the same advantages cited above.

b. Regarding claim 5, note that Starace discusses wearing out of the brakes (col. 1, Ins 30-35), wherein "brakes" necessarily refers to friction surfaces or pads of some kind. Therefore Matsui and Starace together disclose the limitation of claim 5.

14. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsui in view of Kittredge (US2627675).

a. Regarding claim 10, Matsui discloses the same invention as the applicant except for a pneumatic valve package connected to a pneumatic source, the pneumatic valve package receiving signals from a computer. Matsui is silent as to whether the package of valves employed in controlling the individual pneumatic cylinders of the apparatus are controlled by a computer. Note that inherently there must exist a package of valves, in order to allow the pneumatic cylinders to be operated individually.

Kittredge teaches a pneumatic valve (servo regulating valve 26 in Fig. 1 for example) connected to a pneumatic source (air compressor 12 in Fig. 1 for example) and receiving control signals from a computer (dynamic control loading computer 44 in Figs. 1 and 2)

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the package of valves in the pneumatic system employed by Matsui, in view of the teachings of Kittredge, by employing computer-controlled valves instead of valves not controlled by a computer, in order to allow for simpler actuation of valves (otherwise a mechanical system would be needed).

b. Regarding claim 11, Matsui discloses the same invention as the applicant, except for an air accumulator located between the pneumatic source and the valve package.

Kittredge teaches using an air accumulator (air supply tank 14 in Fig. 1 for example) between the pneumatic supply (air compressor 12 in Fig. 1) and the pneumatic valve package (servo regulating valve 26 in Fig. 1)

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the compressed air/pneumatic system of Matsui, in view of the teachings of Kittredge, by providing an air accumulator in order to reduce compressor cycling.

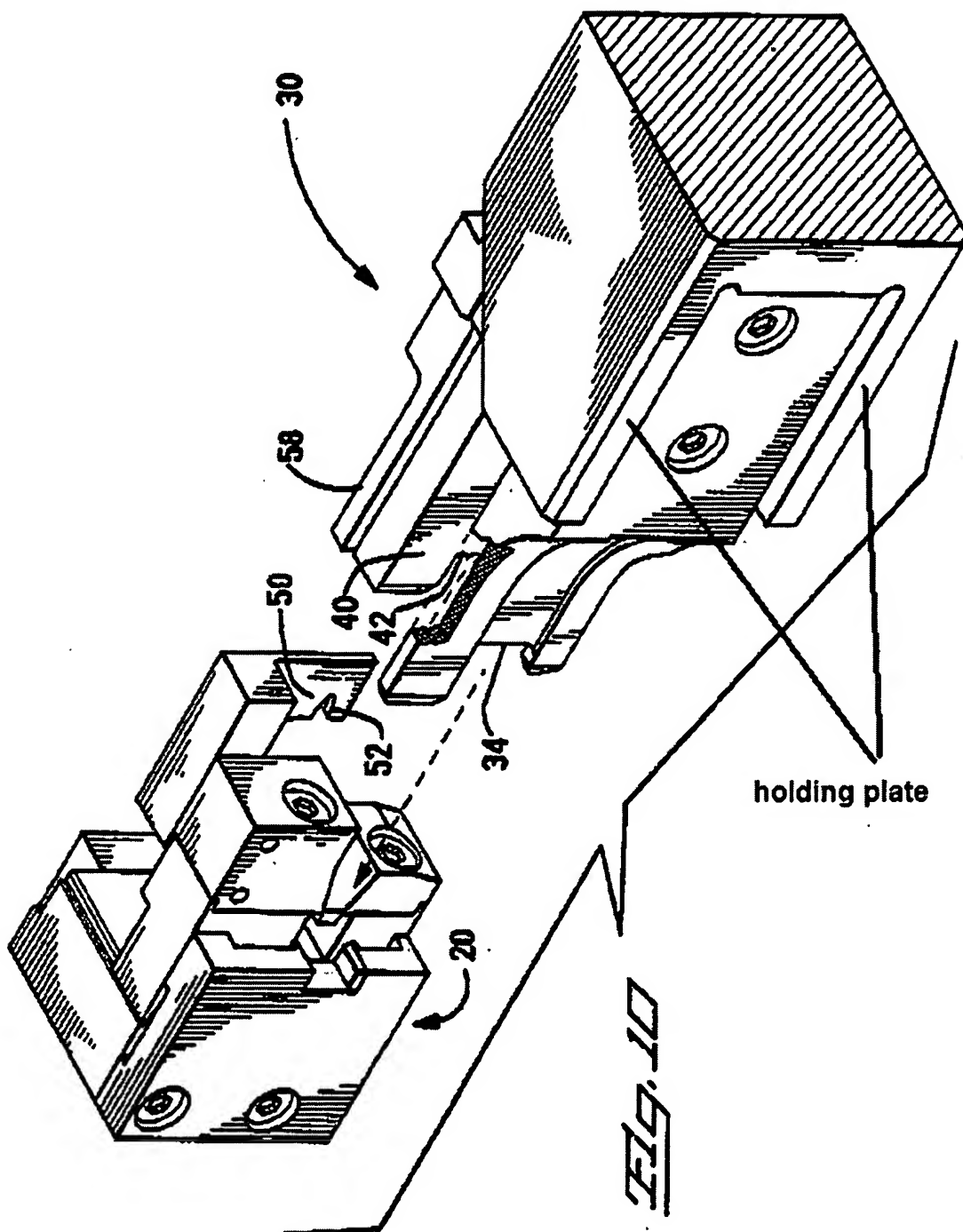
15. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsui in view of Orphanos et al. (US5357669)

Matsui discloses the same invention as the applicant, including a wire cutter tool operatively connected to a second actuator.

Matsui does not disclose a wire cutter tool mounted inside a holding plate.

Orphanos et al. teach a crimping apparatus which employs a cutter tool that is slidably mounted in a holding plate (see image below; also Fig. 10 in Orphanos et al.)

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the wire cutter of Matsui, in view of the teachings of Orphanos et al., by employing a cutter which is slidably mounted in a plate, in order to facilitate quick removal and replacement with a different cutter.



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16. Claims 18-21 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsui in view of Wilson et al. (US6655013).

a. Regarding claim 18, Matsui et al discloses the same invention as the applicant, including a crimp punch tool (assembling punch 31 in Figs. 1, 4, and 5)

Matsui does not disclose a crimp punch tool comprising a plate provided with a punch tip projecting from a bottom side thereof.

Wilson et al. teach this limitation (conductor crimping tool 72 in Figs. 1 and 5 for example)

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the crimp punch tool of Matsui, in view of the teachings of Wilson et al., by utilizing a plate provided with a punch tip projecting from a bottom side thereof, in order to allow for easy removal/replacement of the punch head.

b. Regarding claim 19, Matsui discloses the same invention as the applicant, except for a wire retainer tool adjacent to the crimp punch tool, the wire retainer tool having a tip configured and disposed to position the wire with reference to crimps upon activation of a first actuator.

Wilson et al. teach this limitation (insulation crimping tool 70 in Figs. 1 and 5 for example)

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus disclosed by Matsui, in

view of the teachings of Wilson et al., by providing such a wire retainer, in order to retain the wire in engagement with a crimp while the crimp is being deformed.

c. Regarding claims 20 and 23, Matsui discloses the same invention as the applicant, except for a second wire retainer tool opposite the first wire retainer tool with reference to the crimp punch tool, the second wire retainer tool having a tip configured and disposed to position the wire with reference to crimps upon activation of a first actuator.

Wilson et al. teach this limitation (wire guide 74 in Figs. 1 and 5 for example; wire guide 74 has an oblique edge facing the left edge of the page, as viewed in Fig. 9 for example, whereas conductor crimping tool 72 and insulation crimping tool 70 have an oblique edge facing the *opposite* direction, i.e. the right edge of the page as viewed in Fig. 9 for example) and a slot in its tip (nests 90,96) to receive the wire (see Fig. 5)

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus disclosed by Matsui, in view of the teachings of Wilson et al., by providing such a wire retainer, in order to guide and retain the wire in a crimp while the crimp is deformed.

17. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsui and Wilson et al. as applied to claim 20 above, and further in view of Naka et al. (US6073471).

Matsui and Wilson et al. (as applied to claim 20 above) together disclose the same invention as the applicant, except for first and second wire retainer tools being connected to a corresponding retainer plate by at least one spring.

Naka et al. teach this limitation (wire depressor 54 in Fig. 1 is connected with a spring 56 to the shoulder 43 in Fig. 2a)

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the wire retainer tools of Matsui and Wilson et al., in view of the teachings of Naka et al., by connecting each retainer tool to a retainer plate by means of a spring in order to reduce the force applied to the wire and therefore not cause damage to the wire.

18. Claims 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsui in view of Worrall (US1851028).

Matsui discloses the same invention as the applicant, including a mechanical structure in which the crimps are provided (say a hopper or a magazine in which connectors are provided; see col. 3, lns 55-60)

Matsui does not disclose the particular retention system used to hold the mechanical structure.

Worrall teaches a vacuum table capable of holding various types of articles.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus disclosed by Matsui, in view of the teachings of Worrall, by employing a vacuum table to hold an article (in this particular case a mechanical structure in which crimps are provided), in order to ensure that the

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mechanical structure does not move (as might happen if employing a table of a type other than a vacuum table).

19. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsui in view of Maeda (US6738134) and further in view of NERLITE. Claim 26 is deemed to invoke 35 U.S.C. 112, sixth paragraph.

Matsui discloses the same invention as the applicant, except for a visual positioning system using a camera to locate reference points on a mechanical structure, the system comprising a DOAL, which consists of an illumination system using internal LEDs and a splitting mirror, an aperture on the DOAL allowing the camera to see the reference points on the mechanical structure, the camera being connected to a computer.

Maeda teaches an equivalent structure used to detect a bad crimping condition by using an optical system comprising a camera (5) connected to a computer (control unit 7), an illumination system (lamp 4), and reference points on a mechanical structure (see abstract)

Maeda does not teach the particular structure disclosed by the applicant.

NERLITE teaches the particular structure, including a camera, a splitting mirror, and a light source using LEDs (see underlined and circled areas)

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Matsui, in view of the teachings of Maeda, by adding such a visual positioning system in order to allow for detection of improper crimping and to stop the machine or perform another some other action in

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response to the detection of improper crimping. Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the apparatus of Matsui with a DOAL optical system instead of the optical system taught by Maeda, in order to gain the advantages of a DOAL optical system (see NERLITE reference)

Allowable Subject Matter

20. Claims 9 and 14-16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Livius R. Cazan whose telephone number is (571) 272-8032. The examiner can normally be reached on 7:30AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on (571)272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LRC 01/31/2006

A handwritten signature in black ink, appearing to read 'Peter Vo', with a long horizontal line extending from the end of the signature.

PETER VO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700